



# VITAMIN K KEEPS THE RAT POISON AT BAY



## A Seasons Veterinary Clinic Success Story

Spring is a much-anticipated season for dogs and their owners after being cooped up during the cold winter months. Many people take advantage of the warmer weather to begin renovations to their homes. For one family, their rambunctious pup caused an unexpected and dangerous delay in their spring renovation plans.

Meet Pepper, a 9 month old loving dog with energy levels that could put the Energizer Bunny to shame! She is an absolute sweetheart and is treated like a princess by her loving owners. This past spring, her owners began some renovations on their garage. Unbeknownst to Pepper's family, the rat poison that was previously far out of Pepper's reach, all of a sudden became within reach of a curious little Pepper...

One evening during the renovation process, Pepper's owner noticed the bouncy pup playing with an empty bag in the yard. To their horror, the bag Pepper was playing with was an empty rat poison bag. Her owners had no idea how Pepper had managed to find the rat poison, nor if she had consumed any. They quickly searched the yard for any traces of poison, but found nothing. Despite Pepper's lack of symptoms and the absence of evidence that poison was consumed, her concerned owners brought her to the clinic immediately.

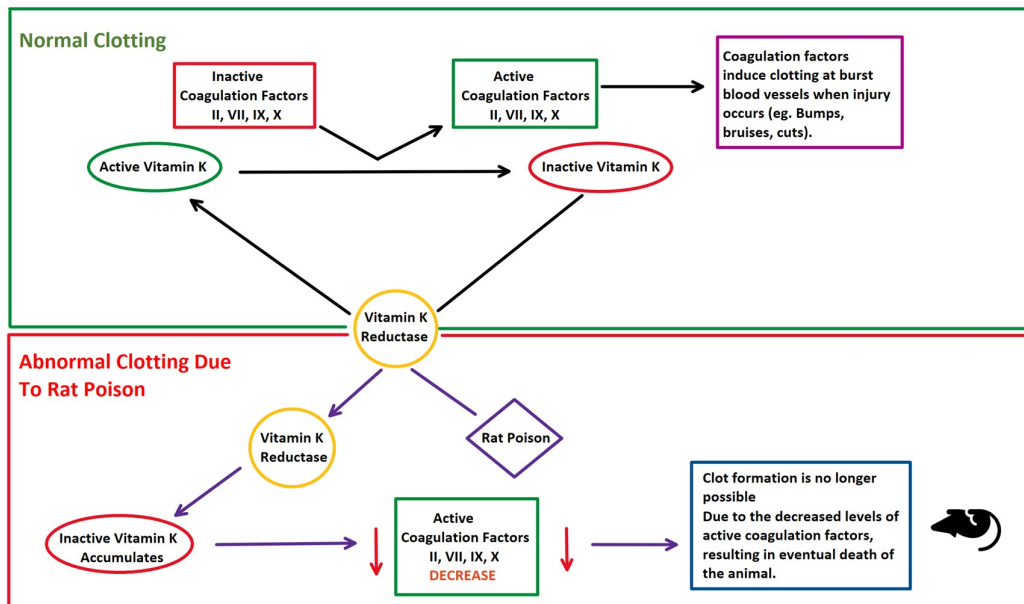


Pepper lounging in her lovely dog bed

At the clinic Dr. Chisholm induced Pepper to vomit, in order to see if she had consumed rat poison and try to eliminate as much as possible before it was absorbed into her body, if she had managed to swallow any. Sure enough, Pepper had indeed eaten poison. Studies have determined that vomiting will only empty about 40% of the contents of the stomach and upper part of the intestine, so Dr. Chisholm knew there was likely more poison still inside Pepper. Sure enough, further analysis of her stool revealed that she had eaten copious amounts of it! This comes as no surprise, as rat poison is very tasty to dogs and cats, as well as the vermin it is designed to entice, making them inclined to gobble up as much as they can get their paws on.

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Contrary to popular belief, rat poison does not cause immediate illness. In fact, it can take up to three weeks for symptoms to appear, which is most often too late for medical intervention. The rodenticide that Pepper consumed was an anticoagulant, which prevents blood clot formation. The poison inhibits the action of an enzyme called vitamin K reductase, which normally converts vitamin K to an active form required for the activation of coagulation factors (see the diagram below). These coagulation factors are required for the blood to clot when an injury occurs. Since the rat poison depletes the levels of active vitamin K in the body, less clotting factors are available for clot formation, resulting in uncontrollable bleeding. Seemingly harmless bumps and tumbles become deadly to the animal, as they are no longer able to stop internal or superficial bleeding.

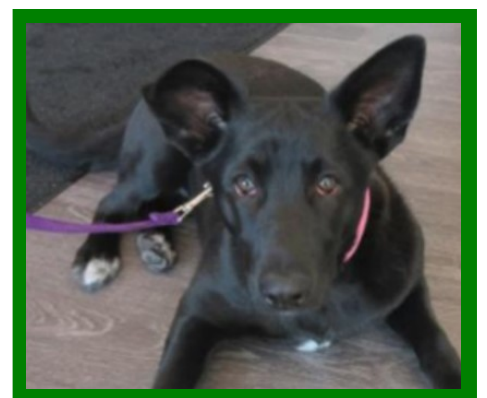


How rat poison interferes with the normal clotting process.

The treatment plan for such a serious scenario is surprisingly simple: Vitamin K three times per day, for one month. Since there is no way to remove the rat poison from the body, the objective of this treatment is to replenish the active vitamin K in the animal's system faster than the rat poison can deplete it, and for a period of time long enough for the poison to work its way out of the animal's system.

The crucial take away from this story that we would like to share is that if you suspect or know that your pet has eaten rat poison, do not hesitate to contact your vet. The sooner the treatment is started, the better the chances your pet has to survive. Even seemingly small amounts of rat poison can be fatal.

Thankfully, Pepper's vigilant owners caught her in the act and contacted us immediately, bringing her in before any serious damage had been done by the poison. She began her treatment right away and carried on being her happy-go-lucky self! We are so glad for both Pepper and her owners that there was a happy ending to this story!



Pepper relaxing at the clinic.